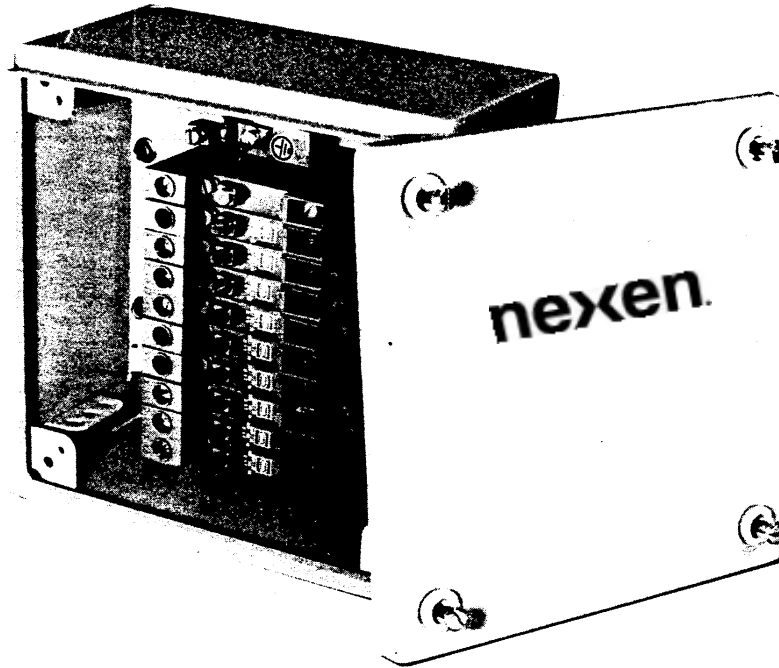


WEB HANDLING DIVISION

INTRINSIC SAFETY BARRIER ASSEMBLY INSTALLATION & OPERATION INSTRUCTIONS



I. INTRODUCTION

Nexen's Intrinsic Safety Barrier Assembly is the bridge between a Tension Controller (TC240-IS), or a Tension Meter (TM130-IS) and Intrinsic Safety Load Cells (MB-S), and/or an Intrinsic Safety Electro-Pneumatic Converter (EN40-IS), used in hazardous areas.

These components are used to build a tension readout or control system for hazardous areas, as certified by Factory Mutual (FM) to meet requirements for Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G. Nonincendive, Class I, Division 2, Groups A, B, C, and D.

Suitable for Class II, Division 2, Group G, when connected per Nexen Drawing SC-1395.

Read this manual carefully. Make use of its instructions and explanations. The "Know How" of safe continuous, satisfactory, and trouble free operation depends on the degree of your understanding of the system, and on your willingness to keep all parts in proper operating condition. Pay particular attention to all **NOTES**, **CAUTIONS**, and **WARNINGS**, to avoid the risk of property damage or personal injury.

II. MOUNTING.

NOTE

Intrinsic Safety Barrier Assembly must be mounted in a non-hazardous area.

- A. Select a suitable mounting location within the non-hazardous area for the Intrinsic Safety Barrier Assembly.
- B. Loosen Cover Screws and remove Cover (See Fig. 1).
- C. Determine wiring runs and cut required wiring access holes in Intrinsic Safety Barrier Assembly Housing.
- D. Mount Intrinsic Safety Barrier Assembly in selected location.

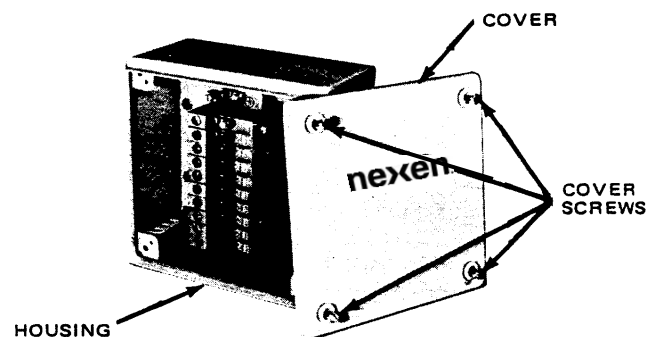


FIGURE 1
Intrinsic Safety Barrier Assembly

III. ELECTRICAL CONNECTIONS.

NOTE

There are two models of Nexen's Intrinsic Safety Barrier Assembly. Determine which model you have, and verify that it is the correct model for the system being installed.

A. Intrinsic Safety Barrier Assembly. (Nexen product No. 912600)

This model consists of nine Intrinsic Safety Barriers, numbered one through nine. It is used for all Tension Meters (TM130-IS) installations, or Tension Controller (TC240-IS) installations when the 4 to 20 milliamp output signal does not enter the hazardous area (See Fig. 2).

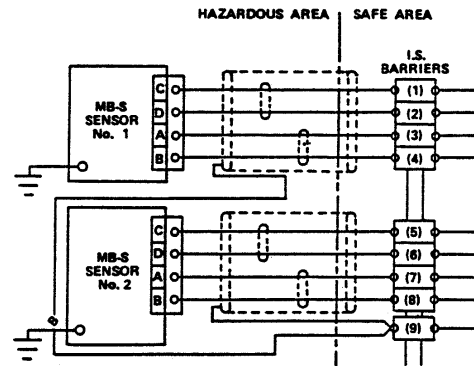


FIGURE 2
Intrinsic Safety Barrier Assembly.
Product No. 912600

B. Intrinsic Safety Barrier Assembly. (Nexen Product No. 912069)

This model consists of ten Intrinsic Safety Barriers, numbered one through ten. It is used when the 4 to 20 milliamp signal must enter the hazardous area (See Fig. 3).

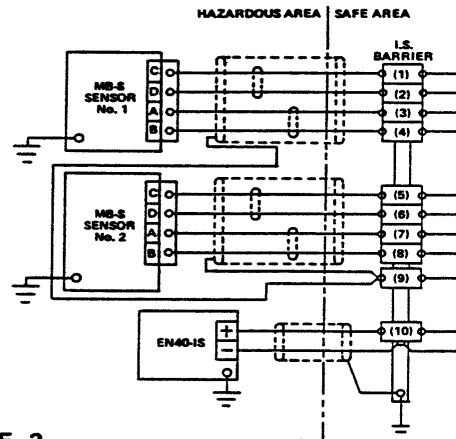


FIGURE 3
Intrinsic Safety Barrier Assembly
Product No. 912069

NOTE

When making electrical connections, "No. 3" (Blue Cover) terminal must go to the hazardous area. "No. 2" terminal is ground. "No 1" terminal goes to Tension Controller or Tension Meter (See Fig. 4).

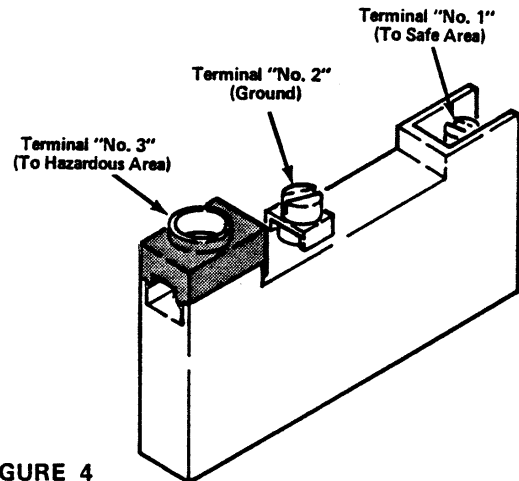


FIGURE 4
Intrinsic Safety Barrier Terminals.

C. Electrical Connections — Sensor (See Fig. 5)

NOTE

Use customer supplied four wire (two twisted pairs), 18 AWG, shielded cable to connect "MB" Intrinsic Safety Sensors to Intrinsic Barrier.

1. Connect Pin C on plug provided with Sensor No. 1, to Terminal 3 of Barrier 1, Pin D to

Terminal 3 of Barrier 2, Pin A to Terminal 3, of Barrier 3, and Pin B to Terminal 3 of Barrier 4, (See Fig. 5).

2. Connect Pin C on plug provided with Sensor No. 2, to Terminal 3 of Barrier 5, Pin D to Terminal 3 of Barrier 6, Pin A to Terminal 3 of

Barrier 7, and Pin B to Terminal 3 of Barrier 8 (See Fig. 5).

3. Connect shield wire from both Sensor cables to Terminal 3 of Barrier 9 (See Fig. 5).

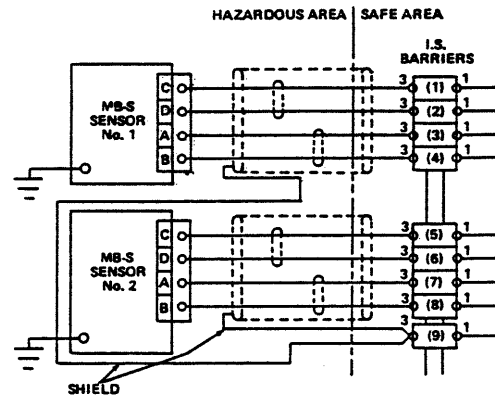


FIGURE 5
Electrical Connections – Sensor.

D. Electrical Connections — EN40-IS (See Fig. 6).

NOTE

Use customer supplied two wire (one twisted pair), 18 AWG shielded cable to connect EN40-IS to Intrinsic Safety Barrier.

1. Connect Positive (+) Terminal of EN40-IS to Terminal 3 of Barrier 10 (See Fig. 6).
2. Connect Negative (—) Terminal of EN40-IS to Terminal 2 of Barrier 10 (See Fig. 6).
3. Connect cable shield to Bus Bar used to mount Intrinsic Safety Barriers (See Fig. 6).

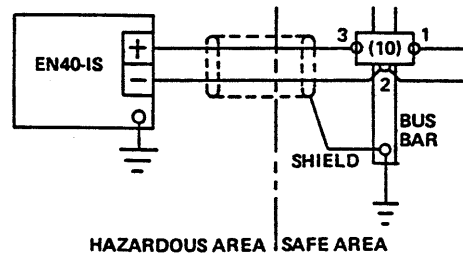


FIGURE 6
Electrical Connections – EN40-IS.

E. Electrical Connections — TM130-IS (See Fig. 7).

NOTE

Use customer supplied four conductor 18 AWG, shielded cable to connect "TM130-IS" to Intrinsic Safety Barrier Assembly.

1. Connect Terminal 1 of Barrier 1 to Terminal 1 of "TM130-IS", Terminal 1 of Barrier 2 to Terminal 2 of "TM130-IS", etc., until all connections have been made (See Fig. 7).
2. Connect both shields and Terminal 1 of Barrier 9, to Terminal 9 of "TM130-IS" (See Fig. 7).

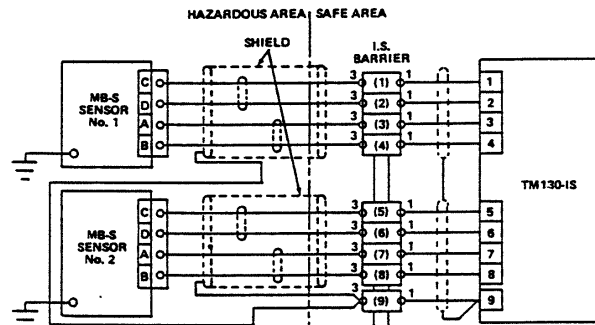


FIGURE 7
Electrical Connections – TM130-IS.

F. Electrical Connections — TC240-IS (See Fig. 8).

NOTE

Use customer supplied four conductor 18 AWG, shielded cable to connect Terminals 1 through 9 of "TC240-IS" to Intrinsic Safety Barrier, and two conductor shielded cable to connect Terminals 10 and 11 of "TC240-IS" to Intrinsic Safety Barrier.

1. Connect Terminal 1 of Barrier 1 to Terminal 1 of "TC240-IS", Terminal 1 of Barrier 2 to Terminal 2 of "TC240-IS", etc., until all connections have been made between Terminals 1 through 8 of "TC240-IS" (See Fig. 8).
2. Connect both shields and Terminal 1 of Barrier 9 to Terminal 9 of "TC240-IS" (See Fig. 8).
3. Connect Terminal 1 of Barrier 10 to Terminal 10 of "TC240-IS", and connect Terminal 2 of Barrier 10 to Terminal 11 of "TC240-IS" (See Fig. 8).

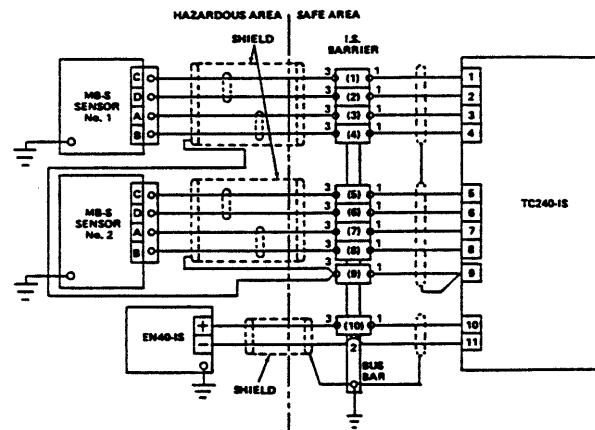


FIGURE 8
Electrical Connections – TC240-IS.

IV. TROUBLESHOOTING.

Intrinsic Safety Barriers cannot be reset if they have been tripped. If a barrier or several barriers have been tripped, they must be replaced.

V. FIELD WIRING INTRINSIC SAFETY.

The Controller and/or Meter cannot be installed in the hazardous environment. The signals to and from the Tension Sensors and to the Electro-Pneumatic Converter must pass through the Intrinsic Safety Barrier. This barrier effectively isolates the Sensors and Electro-Pneumatic Converter in the hazardous area from the Controller and/or Meter in the non-hazardous area. These

components are used to build a tension control system for hazardous areas, as certified by Factory Mutual (FM) to meet requirements for Intrinsically Safe Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G. Nonincendive Class II, Division 2, Group G, when connected per Horton Drawing SC-1395 (See Fig. 9).

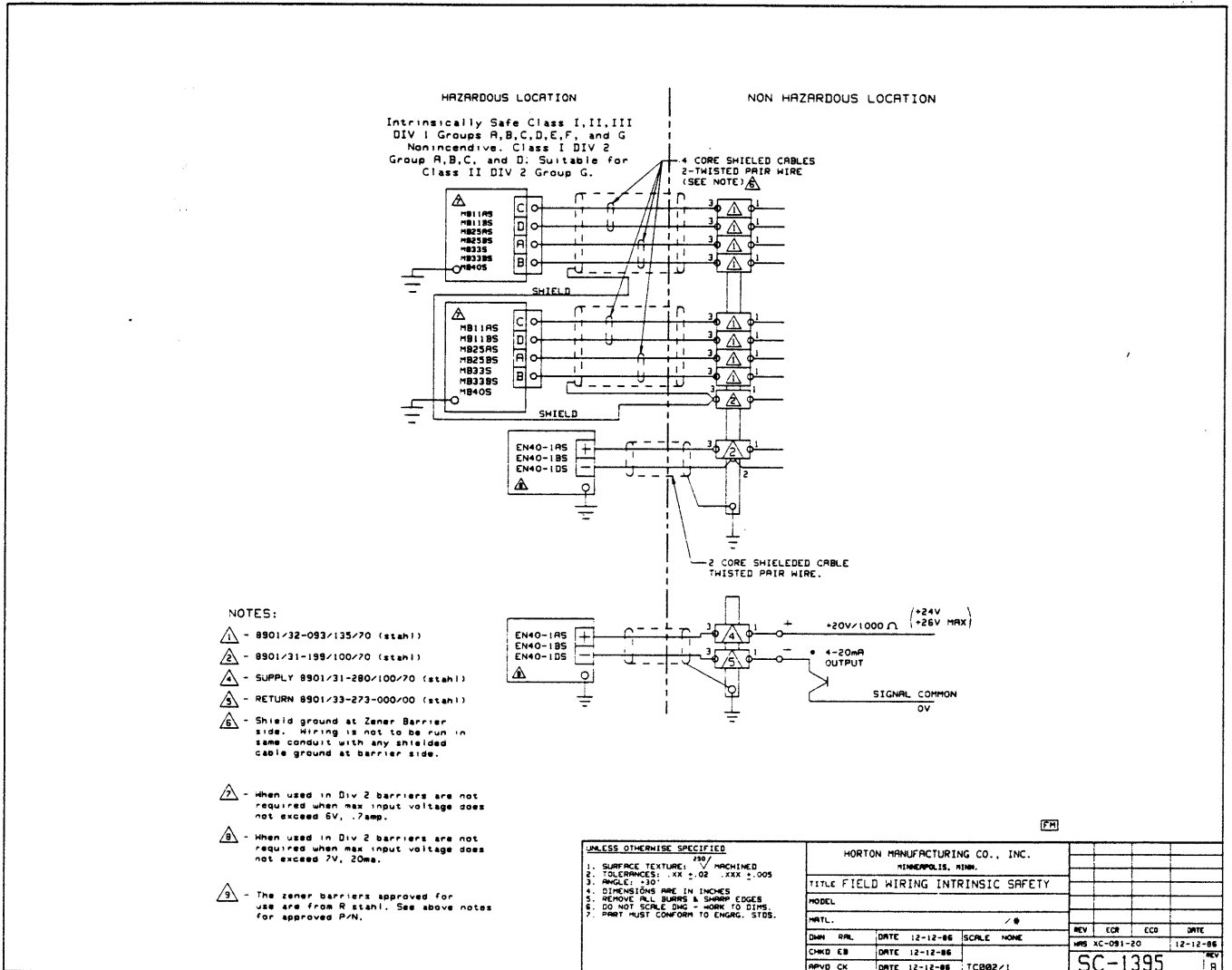


FIGURE 9
Field Wiring Intrinsic Safety

VI. REPLACEMENT PARTS.

When ordering replacement parts, specify model designation, item number, part description, and quantity.

Purchase replacement parts through your local Authorized Nexen Web Handling Distributor.

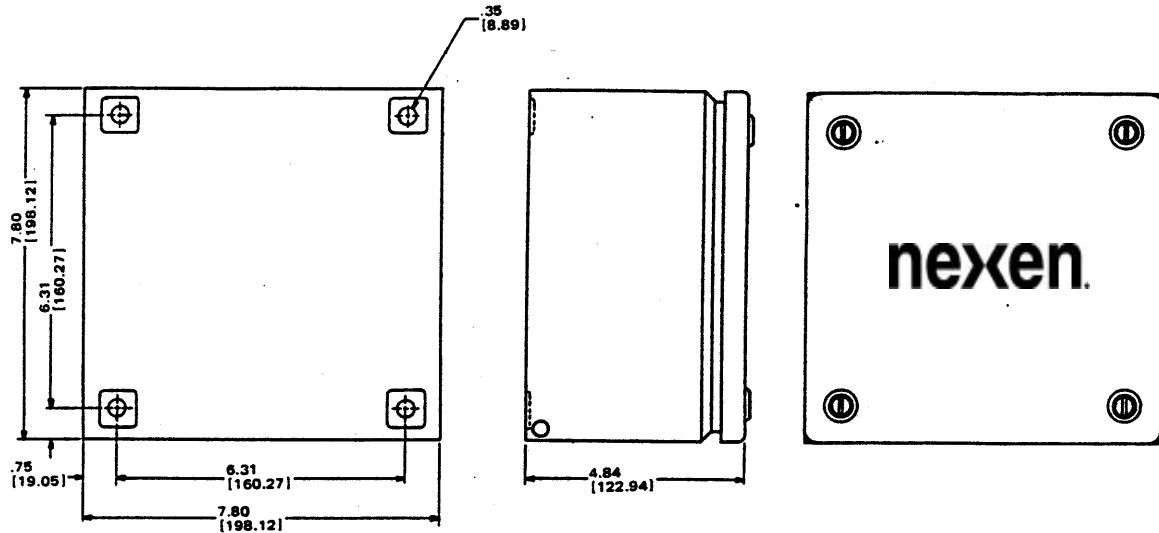


FIGURE 10
Intrinsic Safety Barrier Assembly—Mounting Dimensions.

VIII. PARTS LIST.

ITEM	DESCRIPTION	P/N
1 ¹	Intrinsic Safety Barrier	2684
2 ¹	Intrinsic Safety Barrier	2684
3 ¹	Intrinsic Safety Barrier	2684
4 ¹	Intrinsic Safety Barrier	2684
5 ¹	Intrinsic Safety Barrier	2684
6 ¹	Intrinsic Safety Barrier	2684
7 ¹	Intrinsic Safety Barrier	2684
8 ¹	Intrinsic Safety Barrier	2684
9 ¹	Intrinsic Safety Barrier	2685
10 ²	Intrinsic Safety Barrier	2685

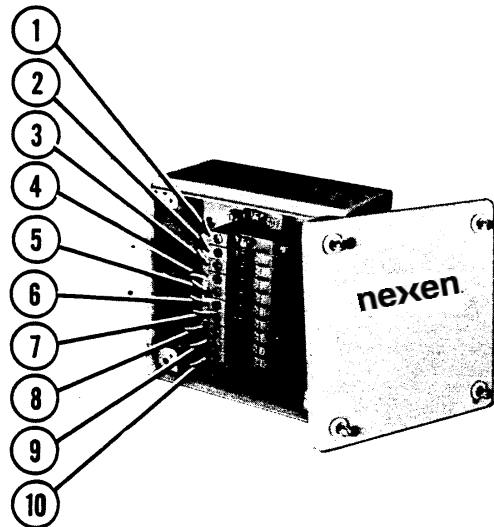


FIGURE 11
Intrinsic Safety Barrier Assembly.

In accordance with Nexen's **established** policy of constant product **improvement**, the **specifications** contained in this manual **are** subject to change without notice. Technical data listed in this manual are **based** on the latest information **available** at the time of printing and are subject to change without notice.

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